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### The Ornithology of 16th Century Mexico

A Franciscan missionary and historian, Fray Bernardino de Sahagun, resolved to put on record the knowledge of the Mexican people at the time of the Spanish conquest. A number of the educated natives were brought together and asked to show, in picture and in word, what they knew about the things of Mexico. The Sahagun manuscript, "General History of the Things of New Spain" was completed in the later part of the 16th century, and, having been translated from the native language, Nahuatl, into Spanish, was tucked away in a monastery in Spain for several centuries. It was subsequently published in Spanish and later in English. Professor Rafael Martin del Campo of the Institute of Biology in Mexico City, has written a series of interpretative essays on book eleven of this work, which deals with the natural history of mammals, birds, fishes, trees, herbs, flowers, etc. In the second essay of this series, on the birds, (Published in the Annals of the Institute of Biology, Volume XI, No. 1, pp. 385—408, Mexico, 1940) Professor Martin del Campo matches up the current scientific names of the birds with the descriptions and natural history notes of the ancient Aztecs.

There is much fact and some fable in these early writings. Curiously enough, some of the vernacular names which the Aztecs used are carried over into the scientific nomenclature of today. For instance, the Nahuatl name *tzitzinua* appears in the scientific name for our Pintail duck, *Anas acuta tzitzihoa*. The Aztecs called the Black-crowned Night Heron *oactli* because of its hoarse call, "Oac-oac", our subspecific name for it is *boactli*. The bird called *chachalacamel* by the Aztecs is the one which we commonly call Chachalaca.

As evidenced by the writings in this early manuscript the Aztecs were aware of the seasonal molts and plumages of some birds, for the account of the Shoveller says: "When it comes to this lake (Lake of Mexico) it has all the feathers brown and it molts twice, the first time it loses the bad down, and

when it wants to go away it molts again . . . ." Of the Avocet, the early writers said "it molts each year, and when the new plumage comes in it is reddish. It breeds on this lake, . . . . departs when the other birds go."

The Mexican Indians were keen observers, as shown in Professor Martin del Campo's essay. Many of their descriptions are accurate and quite detailed. Of the Roseate Spoonbill the Indians said: ". . . . the bill is like a little shovel of the apothecary; what they call a spatula . . . ." The Bufflehead was called *amanocoche* "because they have temples white like paper, (and) it is as if they meant to say: the bird that has ear muffs of paper." The native name for the Ruddy Duck means "potsherd duck". The Cinnamon Teal was called *chilcanauhtli* because the head, breast, back and tail are the color of tawny chili. The Purple Gallinule was described by the Aztecs as having a round mirror in the middle of its forehead. And the Rose-breasted Grosbeak was called "bird of the heart" because of the red patch on the breast of the male.

These Aztec observers were familiar with the songs of their native birds. The Mockingbird was described as singing sweetly and at night. There are many other descriptions of bird song in the account, but perhaps the most interesting is that of the bittern. "It is called *tolcomoctl* for the heavy voice that resounds loudly; it is called *ateponatzli* because from a distance it seems some *teponatzli* (native instrument of percussion consisting of a trunk hollowed out and incised) is being played."

The Indians of 16th century Mexico were familiar with the habits of their avifauna. The Shrike was described as ". . . . having a bill sharp-pointed like a bodkin, it is called thus (Tentzompanmamana) because, after having eaten enough, it does not stop hunting mice and small lizards, and does not eat them, but collects them on the points of the maguey and on the branches of trees."

The migration of birds was observed, especially waterfowl, and their movements were correlated with the seasons. The pelicans were noted to come in winter at the time of the Indian cornfields. The Northern Phalaropes were said to come to the Lake of Mexico between the rains. And the Cotingas were hunted during the month of October when the cherries were ripe.

They knew that some birds such as the Wood Ibis, Purple Gallinule and Avocet came to the lake to breed, while others, including the Pied-billed Grebe, Baldpate, Pintail, Green-winged Teal, Blue-winged Teal, Cinnamon Teal, Shoveller, Canvas-back, Buffle-head, and Hooded Merganser nested in other territories, and came later to the Lake of Mexico.

The Aztecs could explain the migration of the large water birds which

came in bands to their lake but were forced to draw upon fantasy in explaining the disappearance of the hummingbirds. The Indians' account is quite descriptive. "There are little birds in this land that are very small, that appear more horse-fly than bird; there are many kinds of these, they have a small bill, black and slender, just like a bodkin; they make their nests in the shrubs, there they place their eggs and hatch and raise the young; they do not lay more than two eggs. They eat and maintain themselves from the dew of the flowers, like the bees, are very light, fly like an arrow . . ." Where fact leaves off, imagination begins, and the winter absence of these birds was explained thus: "They are renewed each year: in the time of winter they suspend themselves from the trees by the bill, hang there they dry up and their feathers fall out"; (no doubt these were the cocoons of certain moths) "and when the tree begins to grow green again, it begins to revive and plumage begins to appear, and when it commences to thunder in order to rain, then it awakens, and turns and revives." From the individual descriptions, Professor Martin del Campo was able to determine eleven different kinds of hummingbirds.

There are other curious beliefs brought to light in this paper. Of the Roseate Spoonbill "they say that this bird is the leader (or prince) of the white Night Herons, which are in company with it wherever it is seen."

To the monk-chronicler, Fray Bernardino de Sahagun, we are indebted for preserving the knowledge of the Mexican Indians; and to Professor Rafael Martin del Campo for interpreting these writings in the light of scientific nomenclature. Mrs. Bruce L. Clark of Berkeley has kindly made an English translation of the article by Professer Martin del Campo for the California Academy of Sciences.

— Grace Irene Crowe, *California Academy of Sciences*.

### Notes

The Monterey Peninsula Audubon Society has published a pocket-size checklist of local birds, compiled by Mr. Laidlaw Williams. These cards provide an easy method of keeping field records, in addition to furnishing a key to the seasonal status and habitat of the birds included on the list. Orders may be given to Mr. Joseph W. Webb, our Corresponding Secretary or ordered directly from Mrs. Isabelle M. Terhune, Recording Secretary, Monterey Peninsula Audubon Society, Box 7656, Carmel, Calif. The price is ten cents each or one dollar per dozen.

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Miss Amy Rinehart has been appointed Recording Secretary of the Audubon Association of the Pacific. Miss Rinehart will fill the office held by Miss Joan Kirk, who resigned in August when she left to take a position in Michigan in the Public Relations Office of the Girl Scouts.

### September Field Trip

On Sunday, September 14, 1947, twenty-nine members and friends of the

Audubon Association met in Lincoln Park in Alameda for a picnic lunch. The group then went on to Bay Farm Island for a delightful day of birding. The group was led by Mr. Jean Dubois.

The 24 species observed were:

Pintail	Black Turnstone	Forster Tern
Marsh Hawk	Dowitcher	California Jay
Semipalmated Plover	Marbled Godwit	Bush-tit
Hudsonian Curlew	Sanderling	Loggerhead Shrike
Long-billed Curlew	Western Sandpiper	English Sparrow
Lesser Yellow-legs	Least Sandpiper	Brewer Blackbird
Willet	American Avocet	Western Tanager
Ruddy Turnstone	Ring-billed Gull	Savannah Sparrow

— *Historian, Patricia Dubois.*

### October Meeting

The 361st meeting of the Audubon Association of the Pacific will be held on Thursday, October 9, at 8:00 p. m. in the Assembly Room of the San Francisco Public Library at Larkin and McAllister Streets. Dr. Robert T. Orr, Curator of the Department of Birds & Mammals at the California Academy of Sciences, and Professor of Zoology at the University of San Francisco will be the speaker of the evening. His subject will be "Plumage Changes in Birds."

### October Field Trip

Meet at 9:45 a. m. on October 12 at 43rd and Fulton Streets, San Francisco, for the field trip in Golden Gate Park. Take #5 car from the Terminal to meeting place. Group will proceed to Chain of Lakes, and after lunch, to the beach. Bring luncheon and binoculars. Leader to be announced.

### In Memoriam

It is with sadness that we announce the death of two of our members, MR. JOHN AUGSBURY and MR. RALPH GRISWOLD.

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### Audubon Association of the Pacific

Organized January 25, 1917

#### For the Study and the Protection of Birds

President.....	Dr. T. Eric Reynolds.....	140 Estates Drive, Piedmont 11
Corresponding Secretary.....	Mr. Joseph J. Webb.....	519 California St., San Francisco 4
Treasurer.....	Miss Ivander MacIver.....	2414 Telegraph Ave., Berkeley 4
Editor.....	Miss Grace Irene Crowe.....	1420 Henry St., Berkeley 7

Monthly meetings second Thursday, 8:00 p. m.

Assembly Room, San Francisco Public Library, Larkin and McAllister Sts., San Francisco  
Membership dues, payable January 1st, \$3.00 per year

Student memberships, \$1.50 per year

Life memberships, \$50.00

Subscription, \$1.00 per year